

APPENDIX D
EDR - HISTORIC TOPOGRAPHIC MAP REPORT



EDR® Environmental
Data Resources Inc

EDR Historical Topographic Map Report

**Buckman
Buckman
Santa Fe, NM 87506**

Inquiry Number: 1556889.2

November 21, 2005

The Standard in Environmental Risk Management Information

**440 Wheelers Farms Road
Milford, Connecticut 06460**

Nationwide Customer Service

**Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com**

Quadrangle Relation Chart

Inquiry # 1556889.2

Target:

White Rock, NM.

Target:

Horcado Ranch, NM.

Target:

Agua Fria, NM

Target:

Turquoise Hill, NM

Environmental Data Resources, Inc. Historical Topographic Map Report

Environmental Data Resources, Inc.'s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property, and its surrounding area, resulting from past activities. ASTM E 1527-00, Section 7.3 on Historical Use Information, identifies the prior use requirements for a Phase I environmental site assessment. The ASTM standard requires a review of *reasonably ascertainable standard historical sources*. *Reasonably ascertainable is defined as information that is publicly available, obtainable from a source with reasonable time and cost constraints, and practically reviewable.*

To meet the prior use requirements of ASTM E 1527-00, Section 7.3.4, the following *standard historical sources* may be used: aerial photographs, city directories, fire insurance maps, topographic maps, property tax files, land title records (although these cannot be the sole historical source consulted), building department records, or zoning/and use records. ASTM E 1527-00 requires *"All obvious uses of the property shall be identified from the present, back to the property's obvious first developed use, or back to 1940, whichever is earlier. This task requires reviewing only as many of the standard historical sources as are necessary, and that are reasonably ascertainable and likely to be useful."* (ASTM E 1527-00, Section 7.3.2 page 12.)

EDR's Historical Topographic Map Report includes a search of available public and private color historical topographic map collections.

Topographic Maps

A topographic map (topo) is a color coded line-and-symbol representation of natural and selected artificial features plotted to a scale. Topos show the shape, elevation, and development of the terrain in precise detail by using contour lines and color coded symbols. Many features are shown by lines that may be straight, curved, solid, dashed, dotted, or in any combination. The colors of the lines usually indicate similar classes of information. For example, topographic contours (brown); lakes, streams, irrigation ditches, etc. (blue); land grids and important roads (red); secondary roads and trails, railroads, boundaries, etc. (black); and features that have been updated using aerial photography, but not field verified, such as disturbed land areas (e.g., gravel pits) and newly developed water bodies (purple).

For more than a century, the USGS has been creating and revising topographic maps for the entire country at a variety of scales. There are about 60,000 U.S. Geological Survey (USGS) produced topo maps covering the United States. Each map covers a specific quadrangle (quad) defined as a four-sided area bounded by latitude and longitude. Historical topographic maps are a valuable historical resource for documenting the prior use of a property and its surrounding area, and due to their frequent availability can be particularly helpful when other standard historical sources (such as city directories, fire insurance maps, or aerial photographs) are not reasonably ascertainable.

Please call EDR Nationwide Customer Service at
1-800-352-0050 (8am-8pm ET)
with questions or comments about your report.
Thank you for your business!

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EDR Historical Topographic Map Report

Environmental Data Resources, Inc.'s (EDR) Historical Topographic Map Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR Historical Topographic Map Report includes a search of available public and private color historical topographic map collections. For more than a century, the USGS has been creating and revising topographic maps for the entire country at a variety of scales. There are about 60,000 U.S. Geological Survey (USGS) produced topographic maps covering the United States.

References

To meet the prior use requirements of ASTM E 1527-05, Section 8.3.2, the following *standard historical sources* may be used: aerial photographs, fire insurance maps, property tax files, land title records (although these cannot be the sole historical source consulted), topographic maps, city directories, building department records, or zoning/land use records. ASTM E 1527-05, Section 8.3 on Historical Use Information, identifies the prior use requirements for a Phase I environmental site assessment. ASTM E 1527-05 requires *"All obvious uses of the property shall be identified from the present, back to the property's first developed use, or back to 1940, whichever is earlier. This task requires reviewing only as many of the standard historical sources as are necessary and both reasonably ascertainable and likely to be useful."* (ASTM E 1527-05, Section 8.3.2) *Reasonably ascertainable means information that is publicly available, obtainable from a source within reasonable time and cost constraints, and practically reviewable.*

EPA's Standards and Practices for All Appropriate Inquiries (AAI), Section § 312.24, identifies the historical sources of information necessary to achieve the objectives and performance factors of § 312.20. According to AAI, *"historical documents and records may include, but are not limited to, aerial photographs, fire insurance maps, building department records, chain of title documents, and land use records."*

References

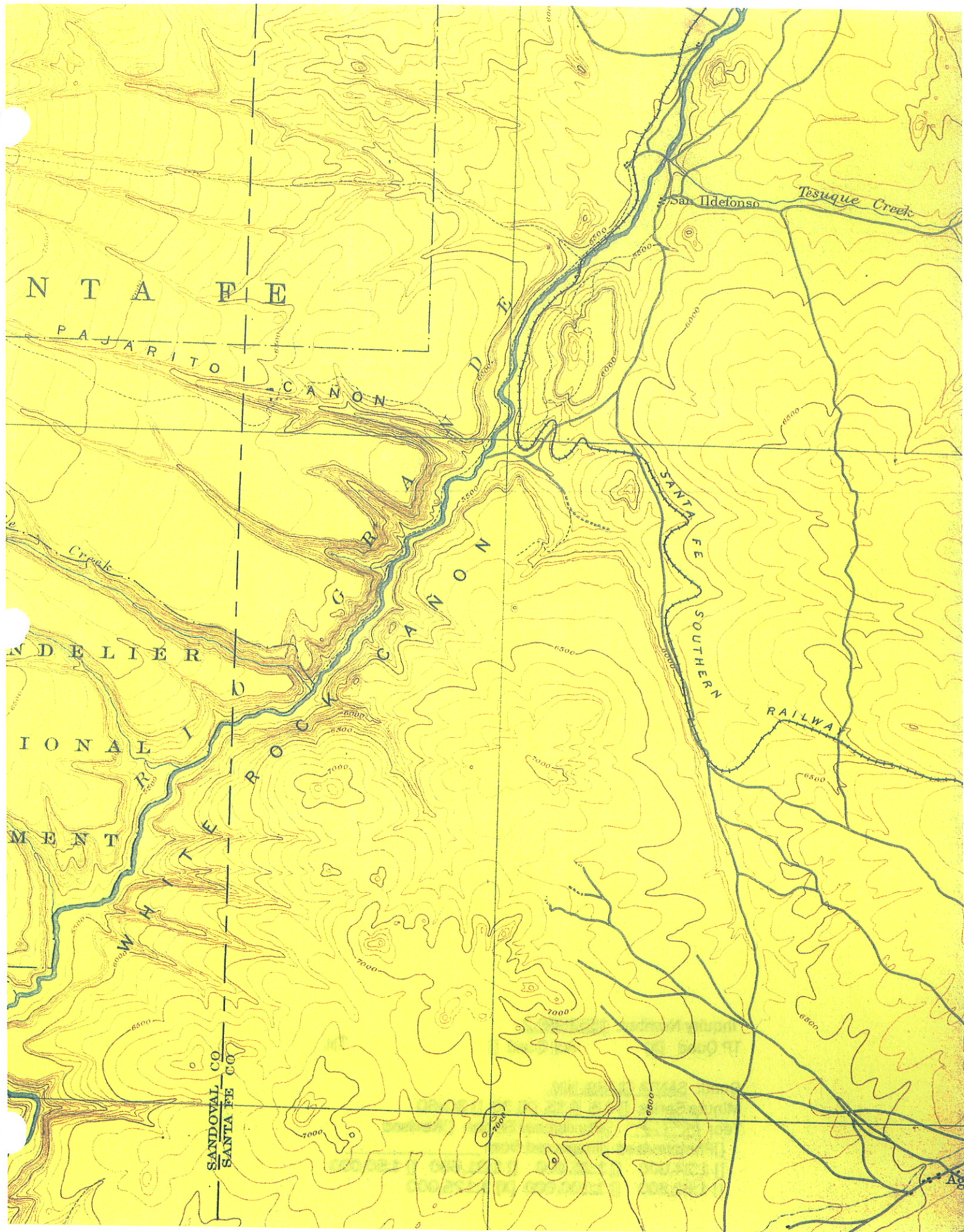
In order to address data gaps, additional sources of information may be consulted. According to the AAI, Section § 312.20 (g), *"to the extent there are data gaps (as defined in § 312.10) in the information developed...that affect the ability of persons (including the environmental professional) conducting the all appropriate inquiries to identify conditions indicative of releases or threatened releases...such persons should identify such data gaps, identify the sources of information consulted to address such data gaps, and comment upon the significance of such data gaps."* According to ASTM E 1527-05, Section 8.3.2.3, *"historical research is complete when either: (1) the objectives in 8.3.1 through 8.3.2.2 are achieved; or (2) data failure is encountered. Data failure occurs when all of the standard historical sources that are reasonably ascertainable and likely to be useful have been reviewed and yet the objectives have not been met....If data failure is encountered, the report shall document the failure and, if any of the standard historical sources were excluded, give the reasons for their exclusion."*

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Inquiry Number: 1556889.2

TP Quad ☒

Adj Quad ☐

↑N

Quad: SANTA CLARA, NM.

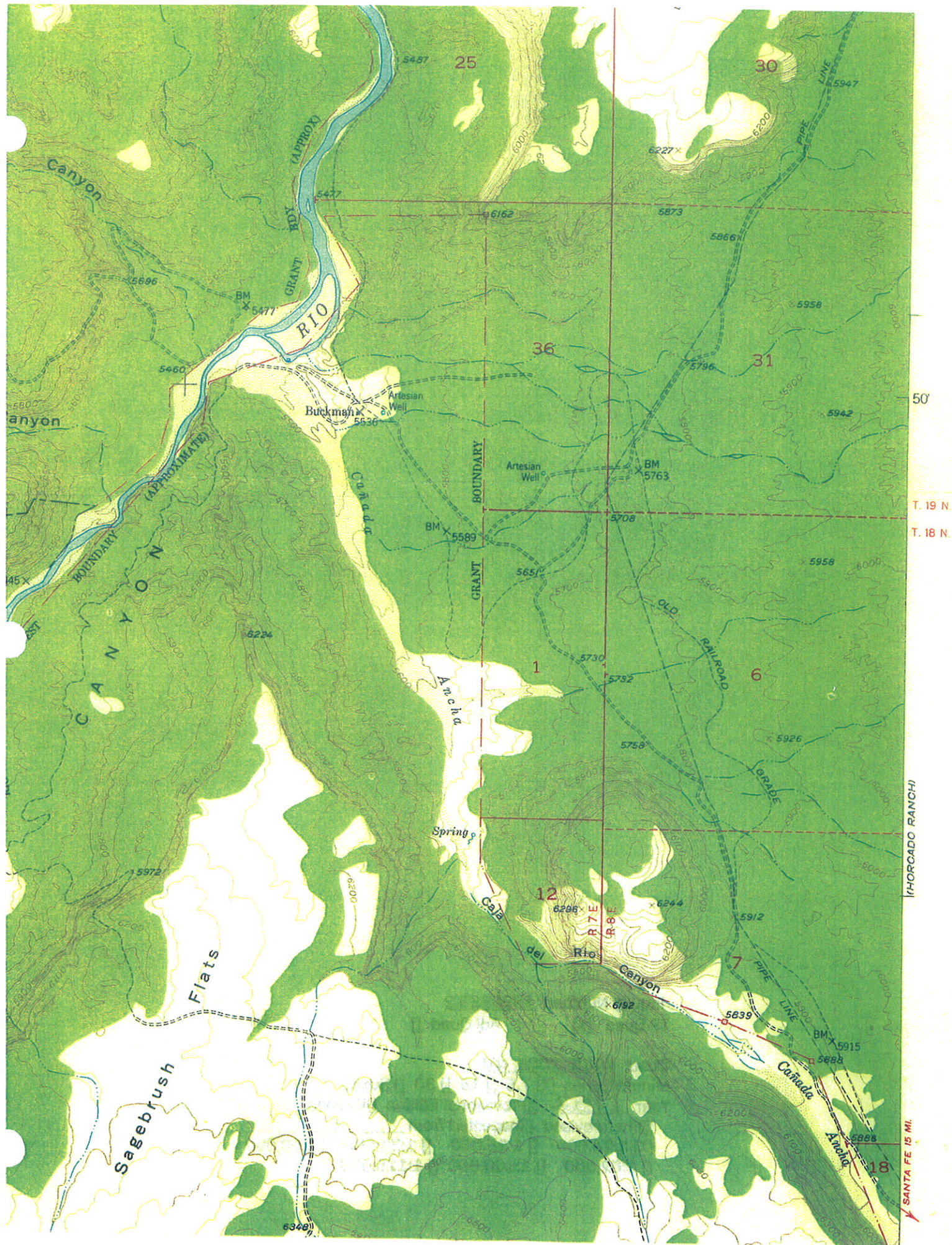
Minute Series ☐ 7.5 ☐ 15 ☒ 30 ☐ 30x60

Year 1892 ☐ Provisional Edition ☐ Revised

☐ Photorevised ☐ Inspected from _____

☐ 1:24,000 ☐ 1:25,000 ☐ 1:31,680 ☐ 1:50,000

☐ 1:62,500 ☐ 1:100,000 ☒ 1:125,000



Inquiry Number: 1556889.2

TP Quad ☒

Adj Quad ☐

↑N

Quad: WHITE ROCK, NM.

Minute) Series ☒ 7.5 ☐ 15 ☐ 30 ☐ 30x60

Year 1952 ☐ Provisional Edition ☐ Revised

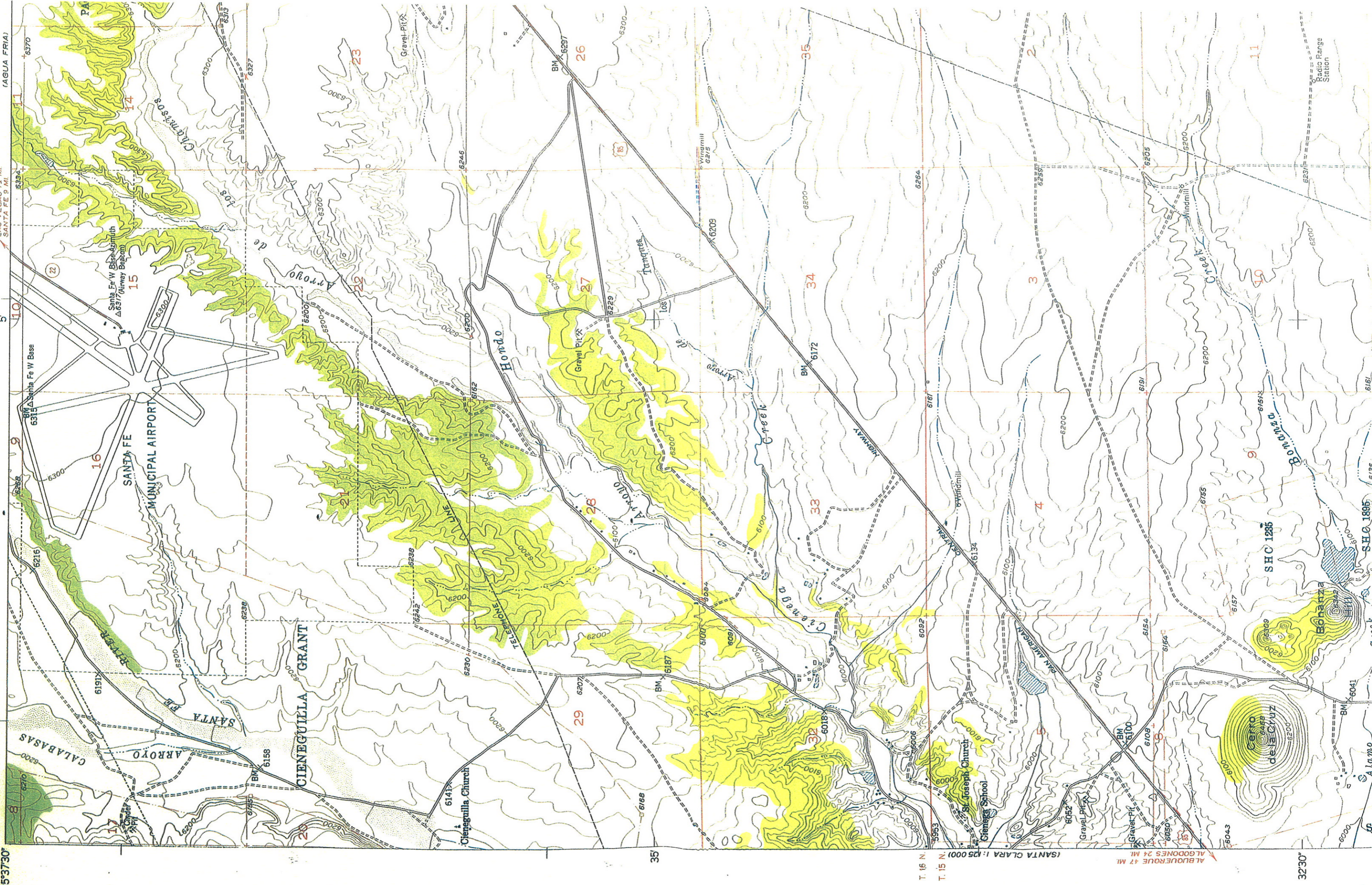
☐ Photorevised ☐ Inspected from _____

☒ 1:24,000 ☐ 1:25,000 ☐ 1:31,680 ☐ 1:50,000

☐ 1:62,500 ☐ 1:100,000 ☐ 1:125,000

(25 000)

LAS VEGAS 72 MI.
SANTA FE 9 MI.
(AGUA FRIA)



Inquiry Number: 1556889.2

TP Quad ☒ Adj Quad ☐

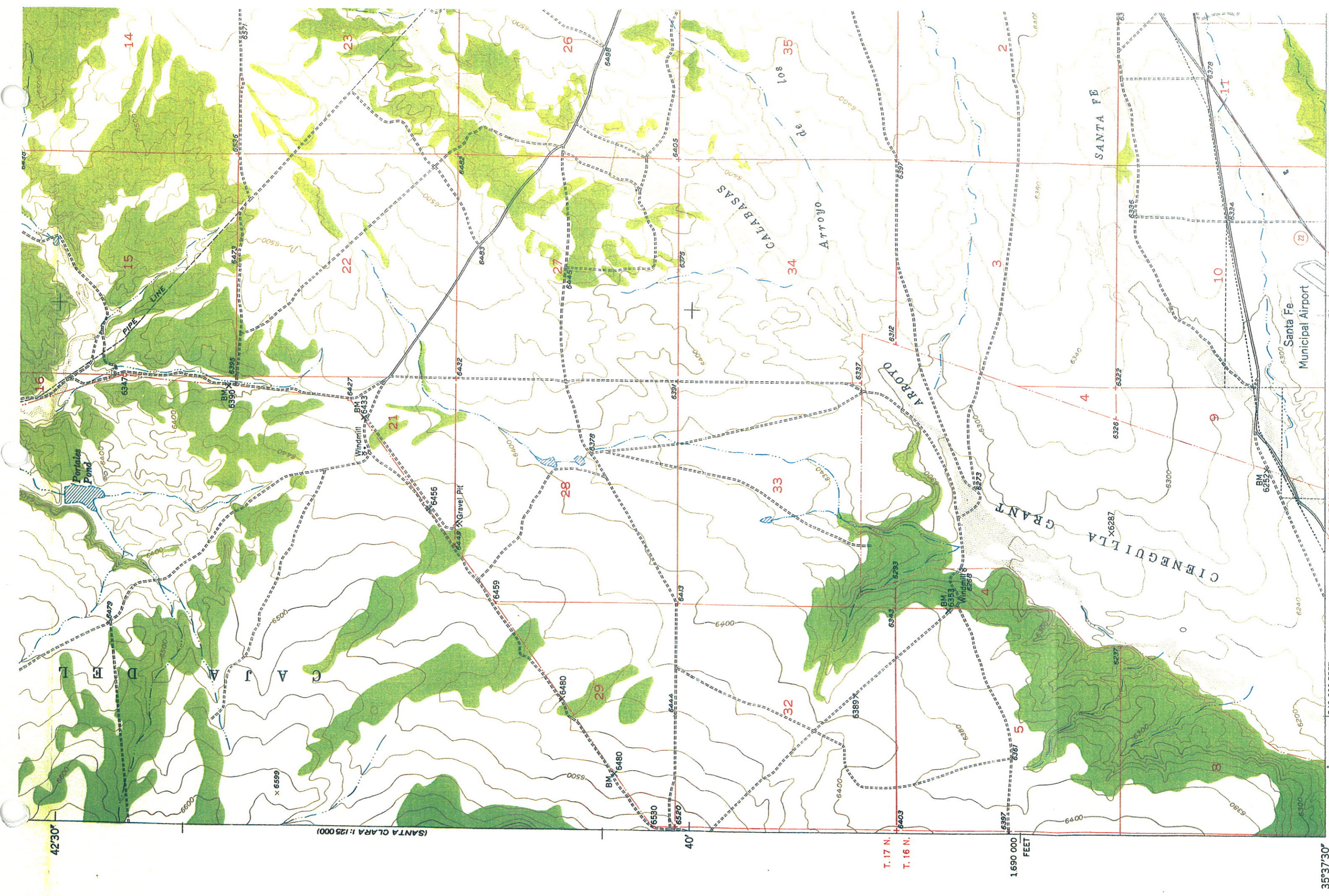
↑N

Quad: TUROUOISE HILL, NM.

Minute Series ☒ 7.5 ☐ 15 ☐ 30 ☐ 30x60

Year 1952 ☐ Provisional Edition ☐ Revised

☐ Photorevised ☐ Inspected from _____
☒ 1:24,000 ☐ 1:25,000 ☐ 1:34,680 ☐ 1:50,000
☐ 1:62,500 ☐ 1:100,000 ☐ 1:125,000



CLARA I: (25 000)

35°37'30" 106°07'30" Mapped, edited, and published by the Geological Survey Control by USGS and USC&GS

Topography from aerial photographs by multiplex methods and plane-table surveys 1951. Aerial photographs taken 1951

134'



SCALE 1:24000

Inquiry Number: 1556889. ↑N

TP Quad ☒ Adj Quad ☐

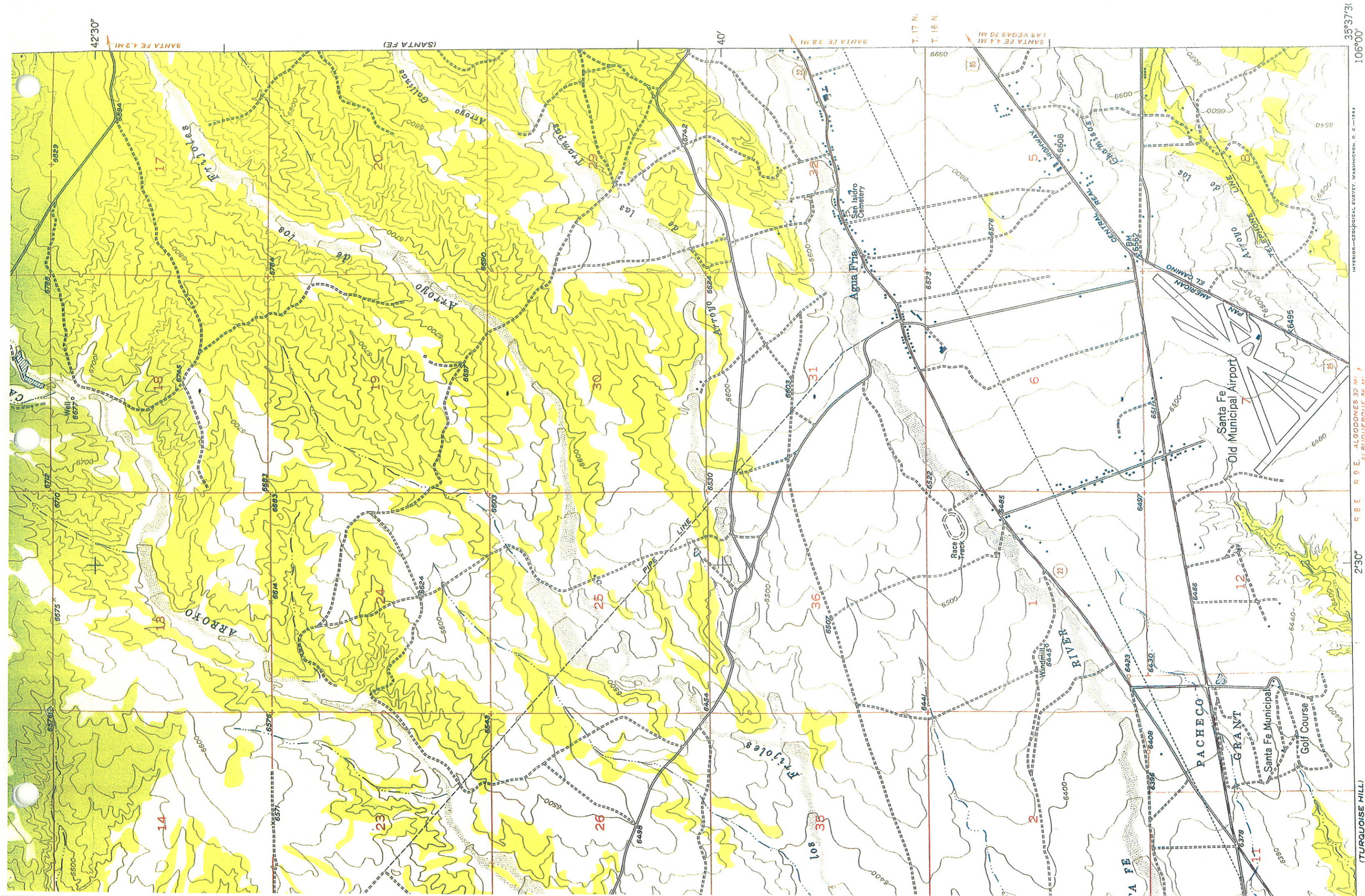
Quad Aqua Fria, NM.

Minute Series ☒ 7.5 ☐ 15 ☐ 30 ☐ 30x60

Year 1951 ☐ Provisional Edition ☐ Revised

☐ Photorevised ☐ Inspected from _____

☒ 1:24,000 ☐ 1:25,000 ☐ 1:31,680 ☐ 1:50,000
☐ 1:62,500 ☐ 1:100,000 ☐ 1:125,000



(TURQUOISE HILL)

ROAD CLASSIFICATION

106°00' 35°37'31"

SCALE 1:24000

INTERIOR-GEOLOGICAL SURVEY, WASHINGTON, D. C. 1983

R 8 E R 9 E ALBUQUERQUE 56 MI

2'30"

ALBUQUERQUE 56 MI

ALBUQUERQUE 56 MI

Inquiry Number: 15510889.2 ↑N

TP Quad ☒ Adj Quad ☐

Quad Area Fria, NM

Minute Series ☒ 7.5 ☐ 15 ☐ 30 ☐ 30x60

Year 1961 ☐ Provisional Edition ☐ Revised

☐ Photorevised ☐ Inspected from _____

☒ 1:24,000 ☐ 1:25,000 ☐ 1:31,680 ☐ 1:50,000

☐ 1:62,500 ☐ 1:100,000 ☐ 1:125,000

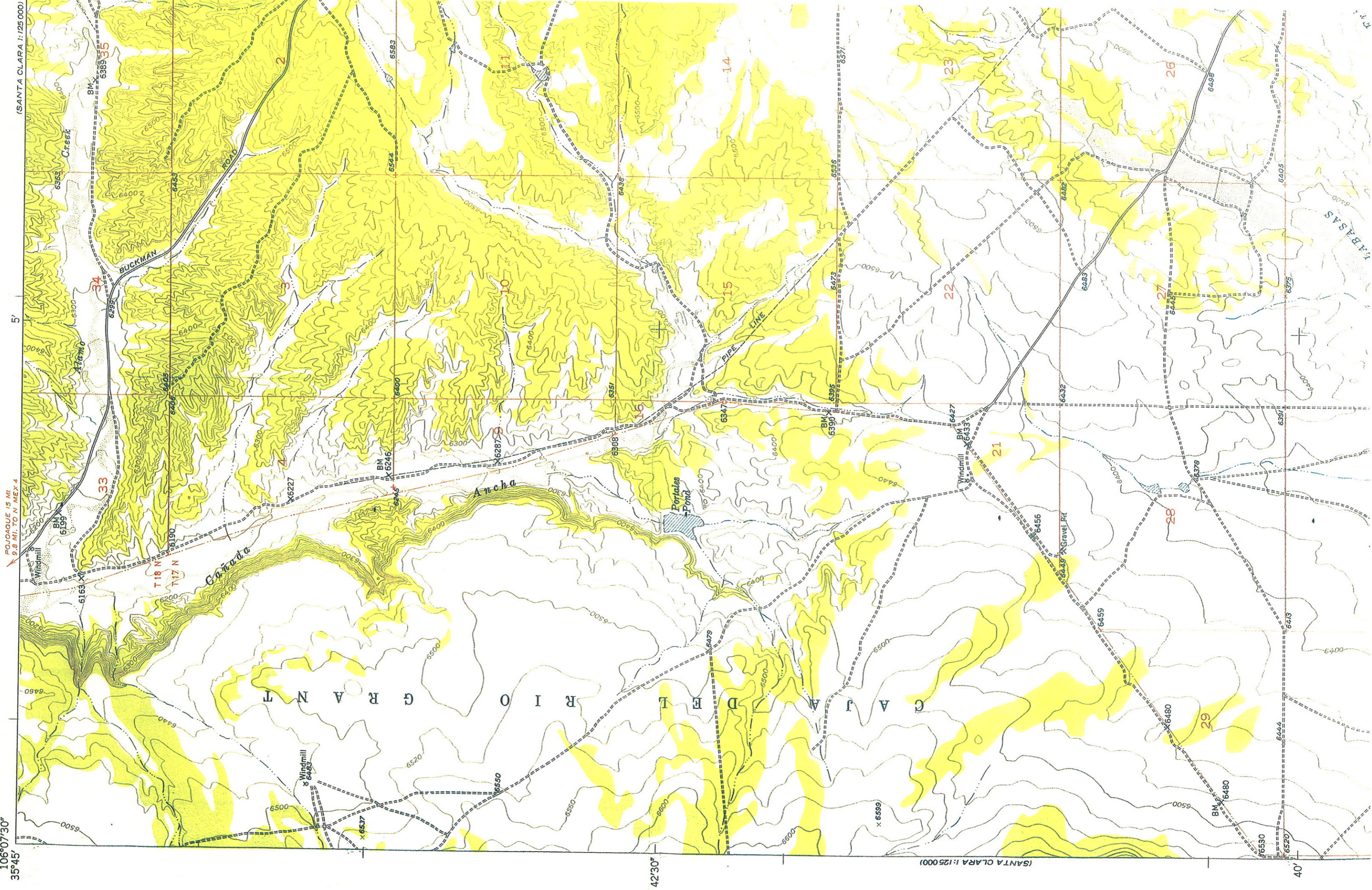
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

106°07'30"
35°45'

1:125,000

5'

(SANTA CLARA 1:125,000)

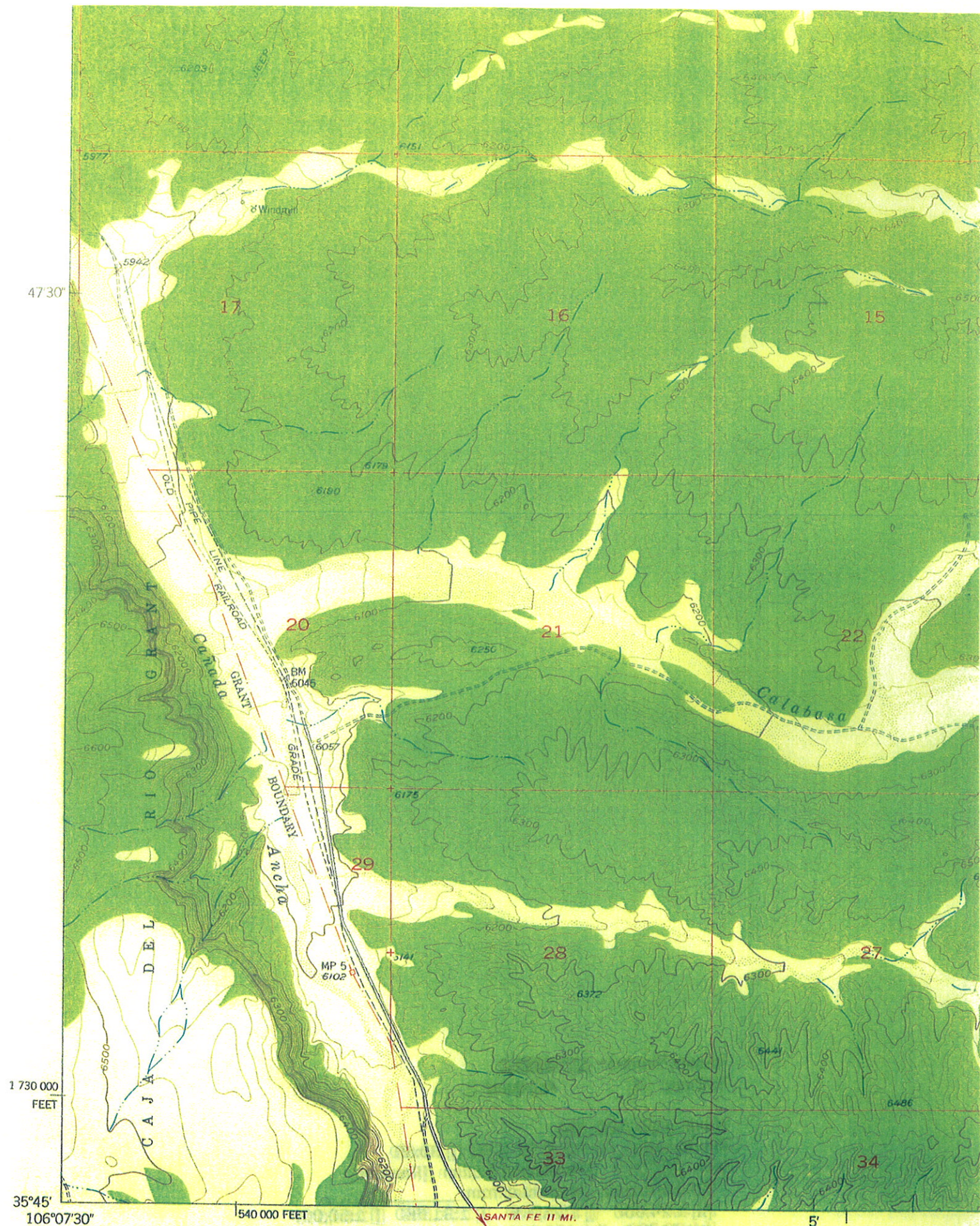


40'

(SANTA CLARA 1:125,000)

Inquiry Number: 1556889.2 ↑N
TP Quad ☒ Adj Quad ☐

Quad: AQUA FRIA, NM.
Minute Series ☒ 7.5 ☐ 15 ☐ 30 ☐ 30x60
Year 1951 ☐ Provisional Edition ☐ Revised
☐ Photorevised ☐ Inspected from _____
☒ 1:24,000 ☐ 1:25,000 ☐ 1:31,680 ☐ 1:50,000
☐ 1:62,500 ☐ 1:100,000 ☐ 1:125,000



Mapped, edited, and published by the Geological Survey
 Control by USGS and USC&GS
 Topography from aerial photographs by multiplex methods
 Aerial photographs taken 1951 Field check 1953

13 1/2°

1000

Inquiry Number: 1556889.2

TP Quad ☒ Adj Quad ☐

↑N

Quad: HORCADO, NM.

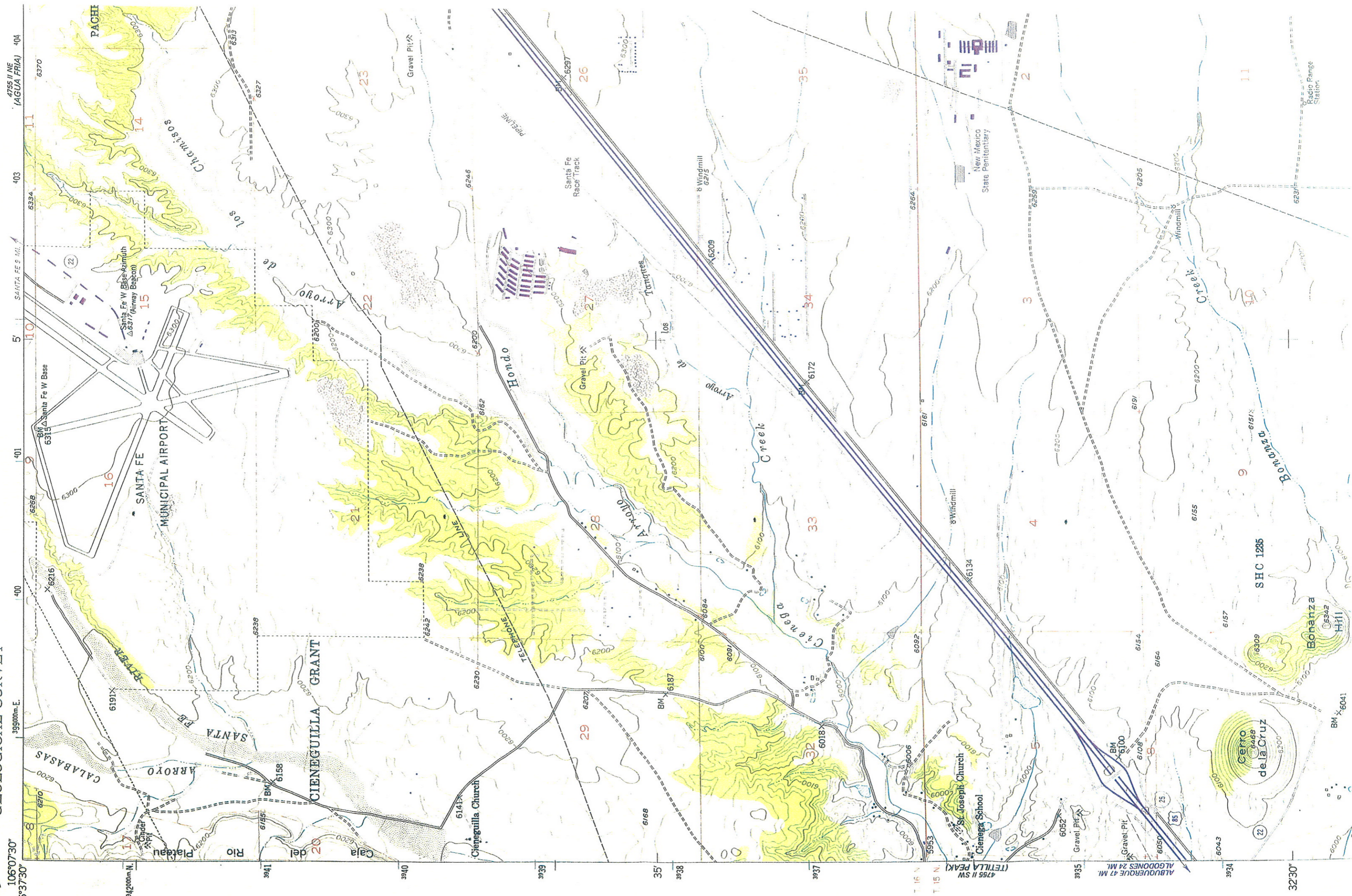
Minute Series ☒ 7.5 ☐ 15 ☐ 30 ☐ 30x60

Year 1953 ☐ Provisional Edition ☐ Revised

☐ Photorevised ☐ Inspected from _____

☒ 1:24,000 ☐ 1:25,000 ☐ 1:31,680 ☐ 1:50,000
☐ 1:62,500 ☐ 1:100,000 ☐ 1:125,000

755 II NW
(SA PEAK)



Inquiry Number: 1556889.2

TP Quad ☒

Adj Quad ☐

↑N

Quad: TURQUOISE HILL, NM.

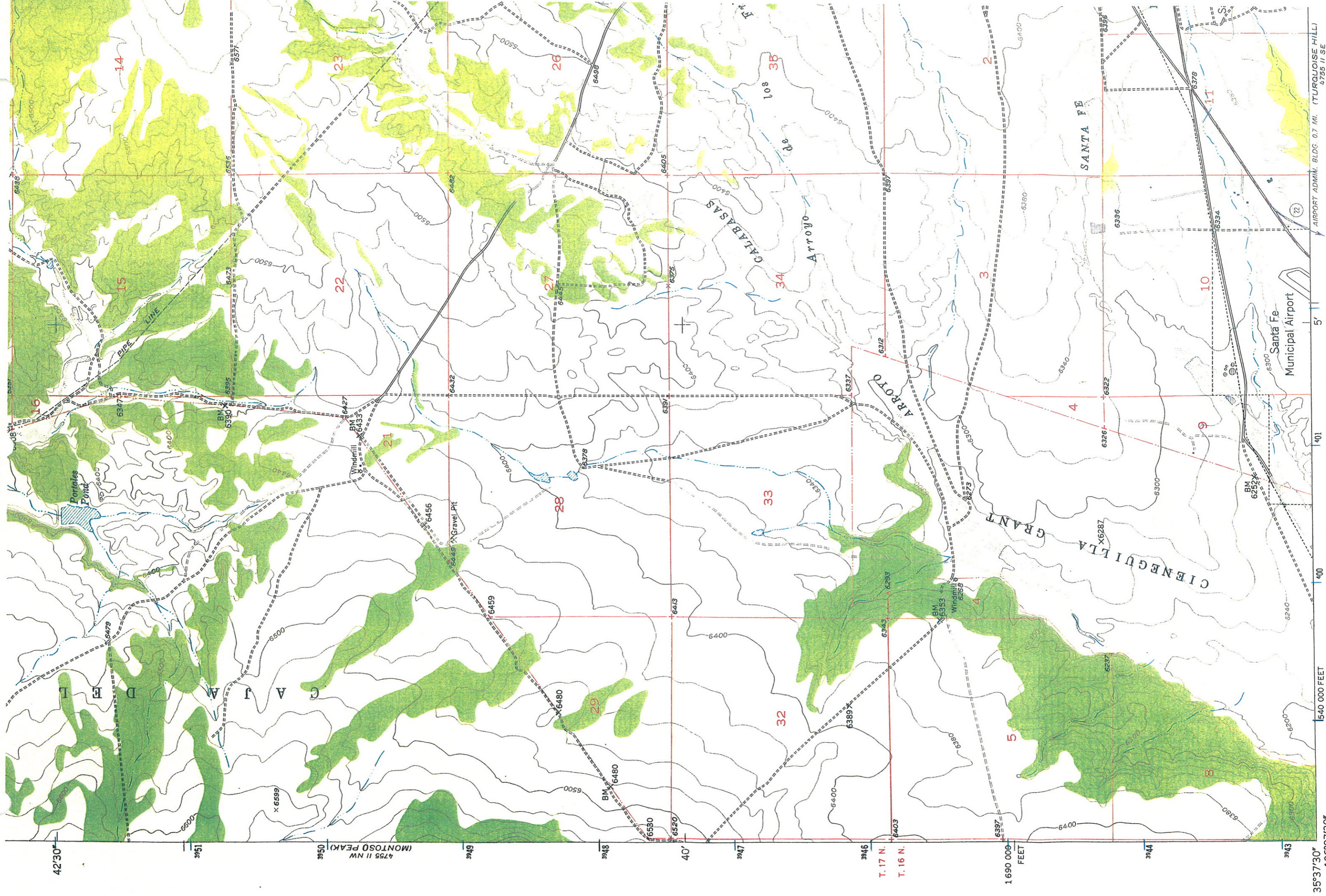
Minute Series ☒ 7.5 ☐ 15 ☐ 30 ☐ 30x60

Year 1977 ☐ Provisional Edition ☐ Revised

~~X~~ Photorevised ☐ Inspected from 1952

☒ 1:24,000 ☐ 1:25,000 ☐ 1:31,680 ☐ 1:50,000

☐ 1:62,500 ☐ 1:100,000 ☐ 1:125,000



Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

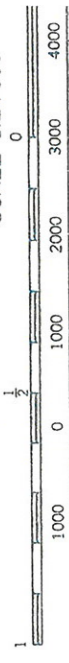
Topography from aerial photographs by multiplex methods

MAP ROOM

Topography from aerial photographs by multiplex methods



SCALE 1:24 000



Inquiry Number: 1556889.2 ^{↑N}

TP Quad ☒ Adj Quad ☐

Quad Aqua Fria, NM

Minute Series 1942 ☒ 7.5 ☐ 15 ☐ 30 ☐ 30x60

Year 1942 ☐ Provisional Edition ☐ Revised

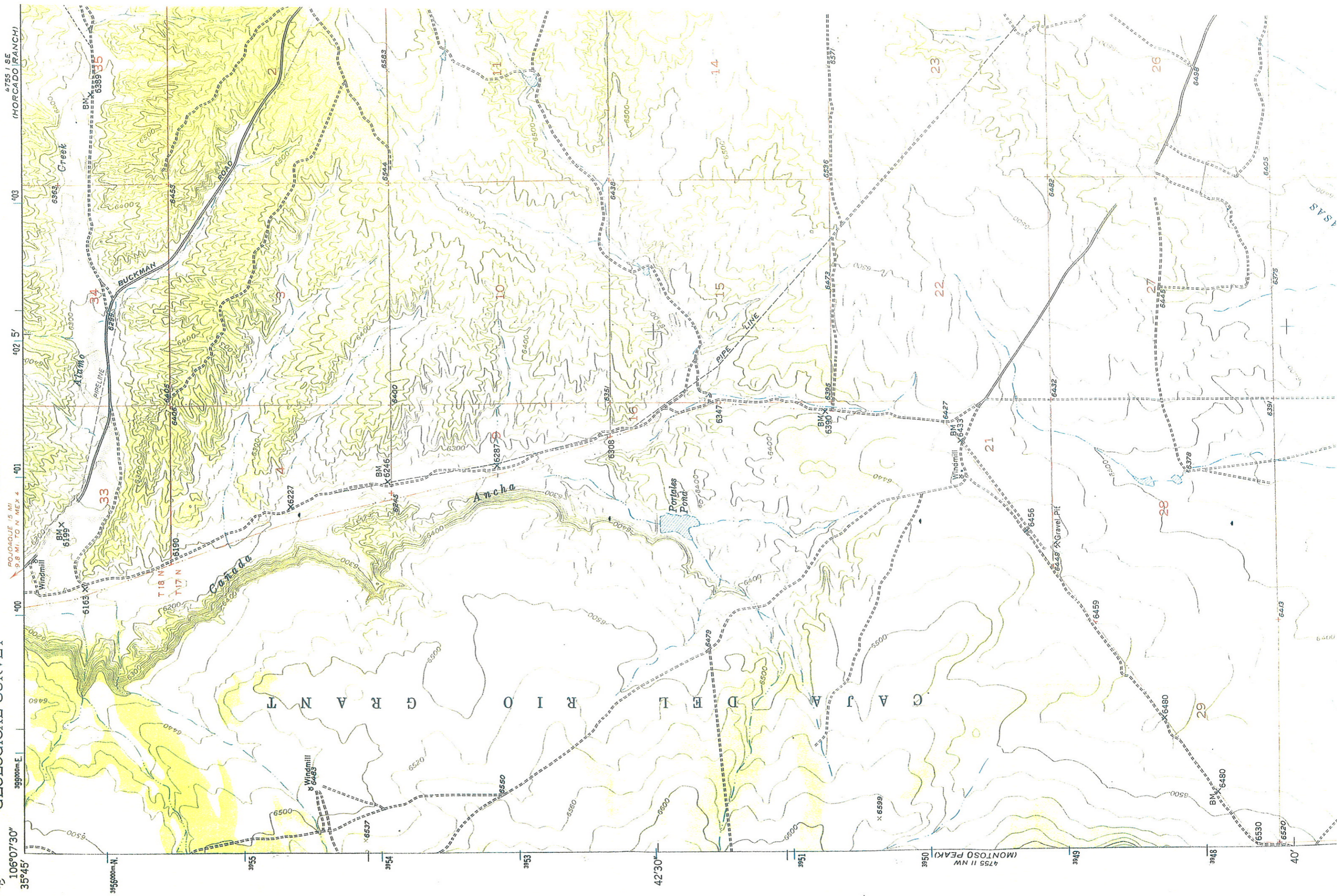
☒ Photorevised ☐ Inspected from 1951

~~1:1.24,000~~ ☐ 1:1.25,000 ☐ 1:1.31,680 ☐ 1:1.50,000
☐ 1:1.62,500 ☐ 1:1.100,000 ☐ 1:1.125,000

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



755 / SW
TE ROCK



ASAS

Inquiry Number: 1556889.2

TP Quad ☒

Adj Quad ☐

↑N

Quad: AQUA FRIA, NM.

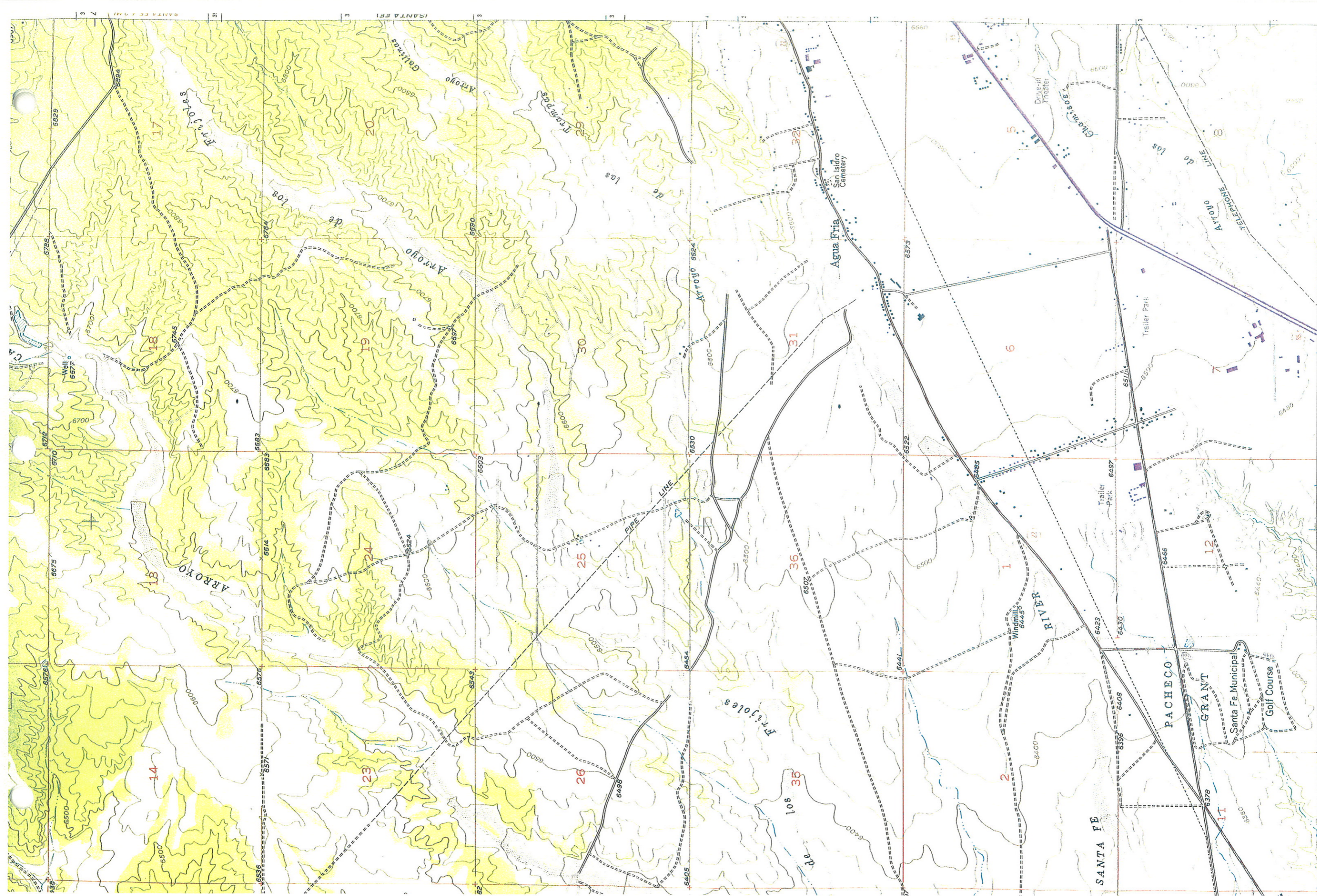
Minute Series ☒ 7.5 ☐ 15 ☐ 30 ☐ 30x60

Year 1977 ☐ Provisional Edition ☐ Revised

☒ Photorevised ☐ Inspected from 1951

☒ 1:24,000 ☐ 1:25,000 ☐ 1:31,680 ☐ 1:50,000

☐ 1:62,500 ☐ 1:100,000 ☐ 1:125,000



MIN. BLDG. 0.7 MI. (TURQUOISE HILL) 4755 II SE
405 2'30" 106° 49'00"E. 106°

MAP ROOM
General Libraries
ROAD CLASSIFICATION

Inquiry Number: 1556889.2

TP Quad ☒

Adj Quad ☐

↑N

Quad

AQUATIA NM

Minute Series ☒

7.5 ☐ 15 ☐ 30 ☐ 30x60

Year 1977

☐ Provisional Edition ☐ Revised

☒ Photorevised

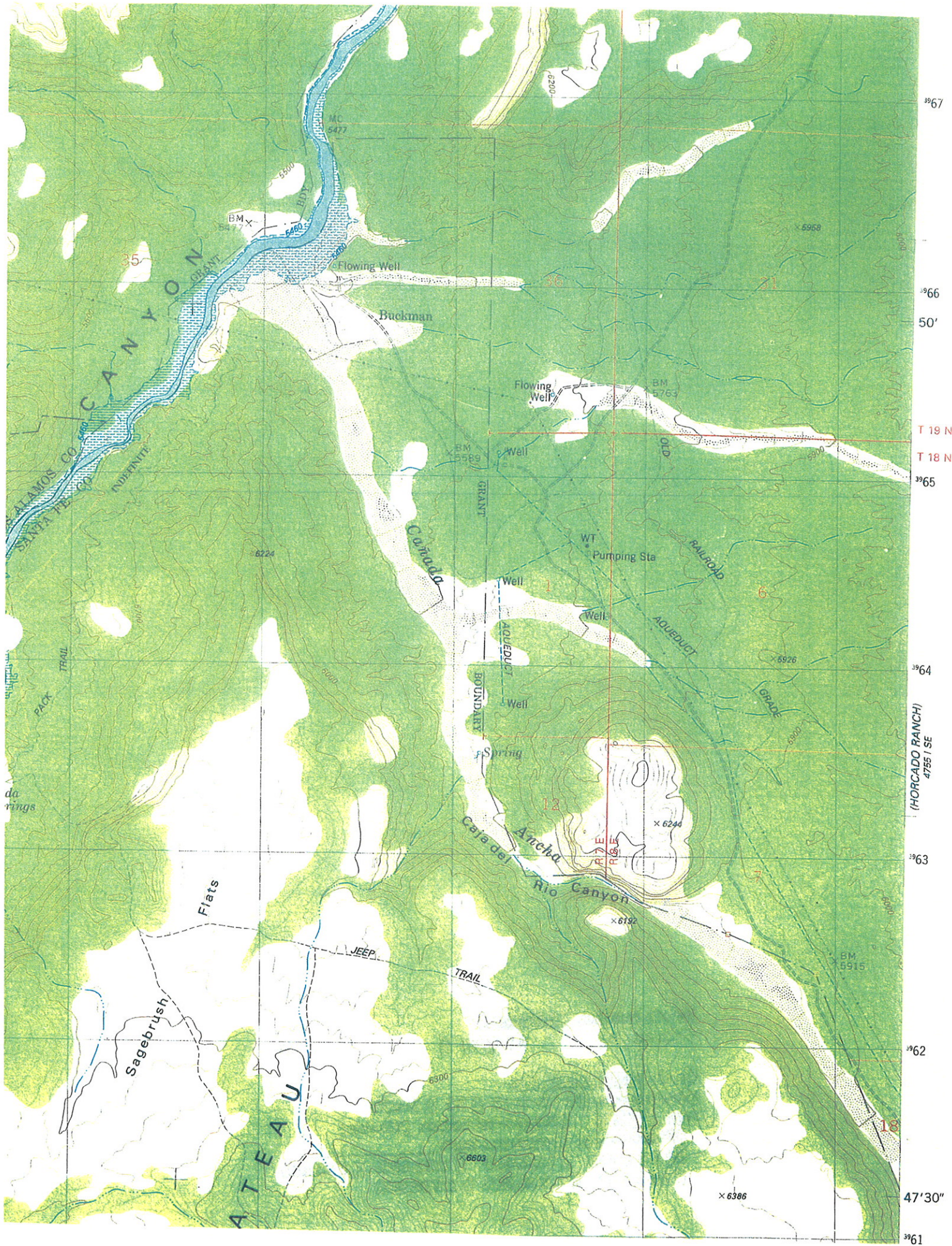
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☒ 1:24,000

☐ 1:25,000 ☐ 1:31,680 ☐ 1:50,000

☐ 1:62,500

☐ 1:100,000 ☐ 1:125,000



Inquiry Number: 1556889.2

TP Quad ☒

Adj Quad ☐

↑N

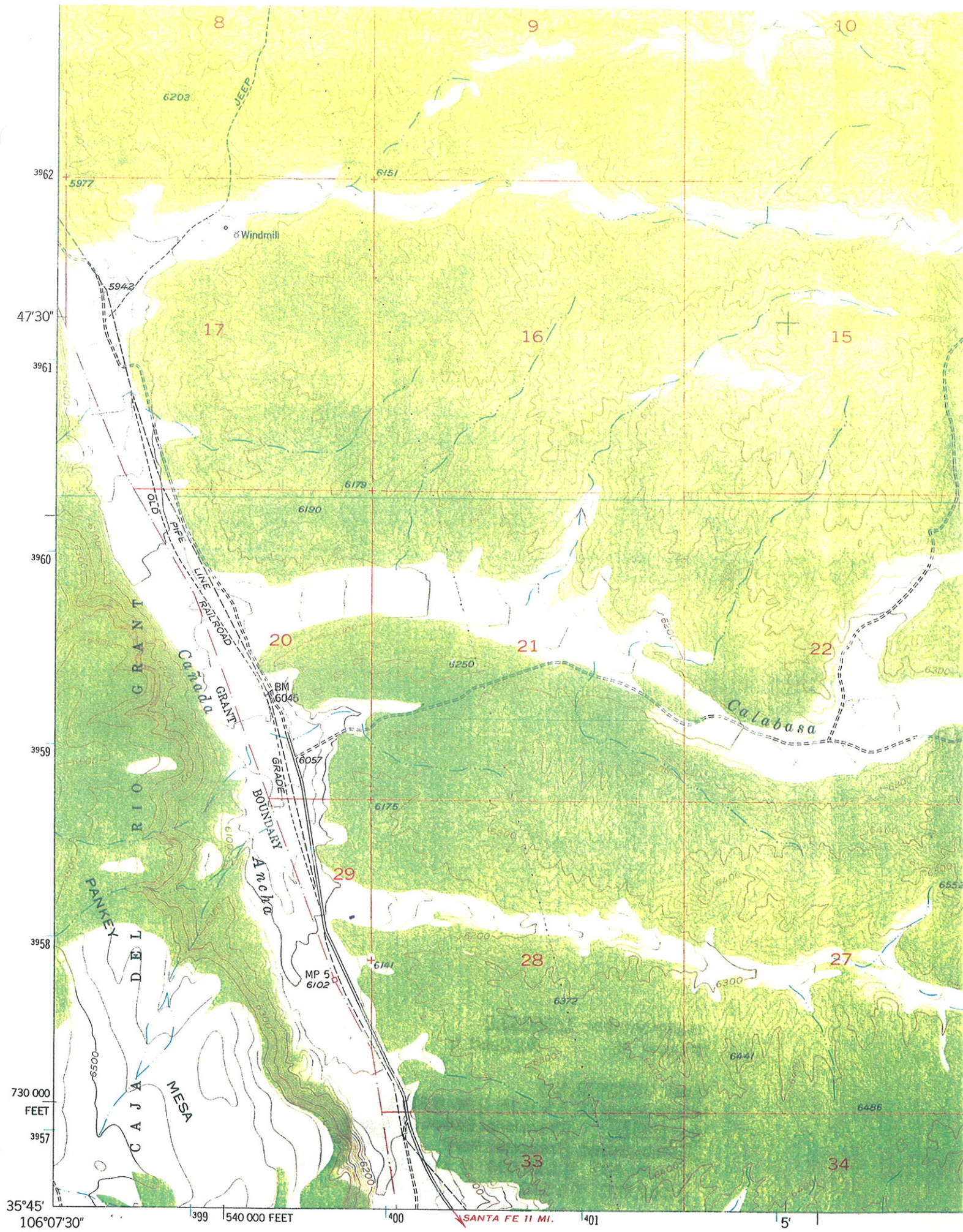
Quad: WHITE ROCK, NM.

Minute Series ☒ 7.5 ☐ 15 ☐ 30 ☐ 30x60

Year 1984 ☐ Provisional Edition ☐ Revised

☐ Photorevised ☐ Inspected from _____

☒ 1:24,000 ☐ 1:25,000 ☐ 1:31,680 ☐ 1:50,000
☐ 1:62,500 ☐ 1:100,000 ☐ 1:125,000



Inquiry Number: 1556889.2

TP Quad ☒ Adj Quad ☐

↑N

Quad: HORCADO, NM.

Minute Series ☒ 7.5 ☐ 15 ☐ 30 ☐ 30x60

Year 1977 ☐ Provisional Edition ☐ Revised

☒ Photorevised ☐ Inspected from 1953

☒ 1:24,000 ☐ 1:25,000 ☐ 1:31,680 ☐ 1:50,000
☐ 1:62,500 ☐ 1:100,000 ☐ 1:125,000

UNITED STATES

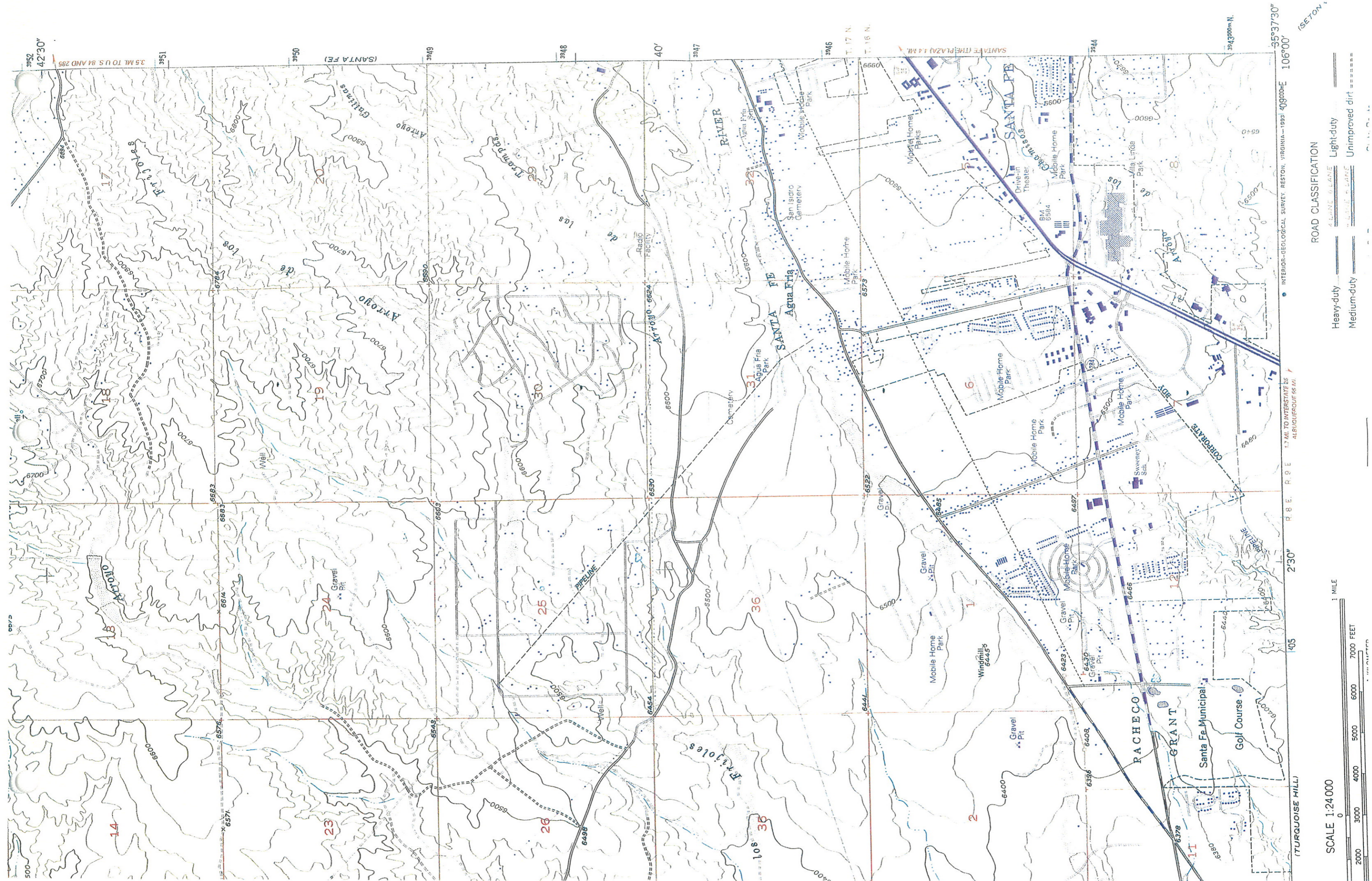
106°07'30"
35°37'30"



32'30"

Inquiry Number: 1556889.2 ↑N
TP Quad ☒ Adj Quad ☐

Quad: TUROUOISE HILL, NM.
Minute Series ☒ 7.5 ☐ 15 ☐ 30 ☐ 30x60
Year 1993 ☐ Provisional Edition ☒ Revised 1952
☐ Photorevised ☐ Inspected from _____
☒ 1:24,000 ☐ 1:25,000 ☐ 1:31,680 ☐ 1:50,000
☐ 1:62,500 ☐ 1:100,000 ☐ 1:125,000



SCALE 1:24 000



1 MILE

ROAD CLASSIFICATION

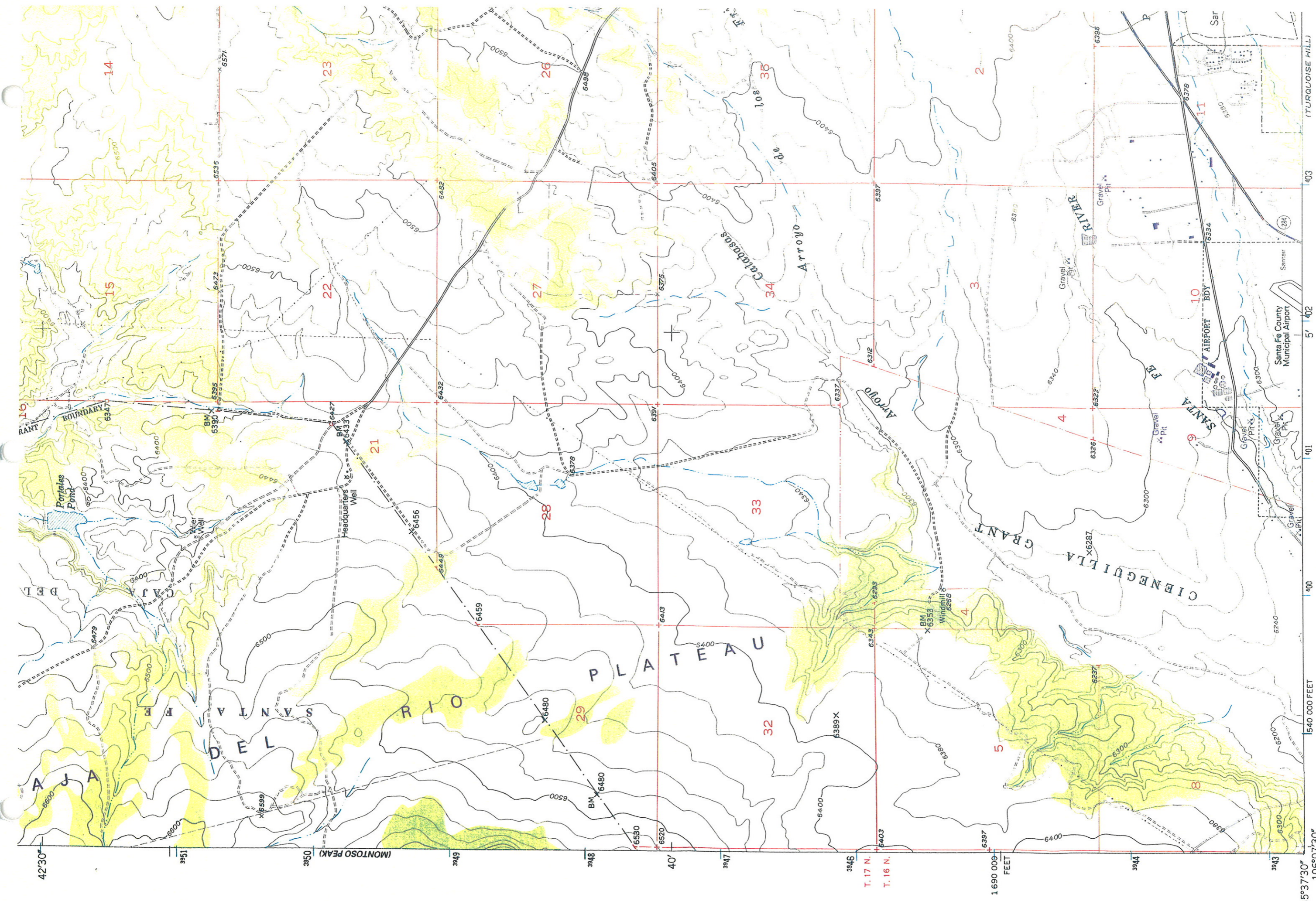
Heavy-duty

LANE GLANIE

Light-duty

Medium-duty

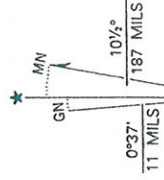
Inquiry Number: 1556889.2
TP Quad ☒ Adj Quad ☐ ↑N
Quad AQUATNA, NJ
Minute Series ☒ 7.5 ☐ 15 ☐ 30 ☐ 30x60
Year 1993 ☐ Provisional Edition ☐ Revised
☐ Photorevised ☐ Inspected from _____
☒ 1:24,000 ☐ 1:25,000 ☐ 1:31,680 ☐ 1:50,000
☐ 1:62,500 ☐ 1:100,000 ☐ 1:125,000



Produced by the United States Geological Survey

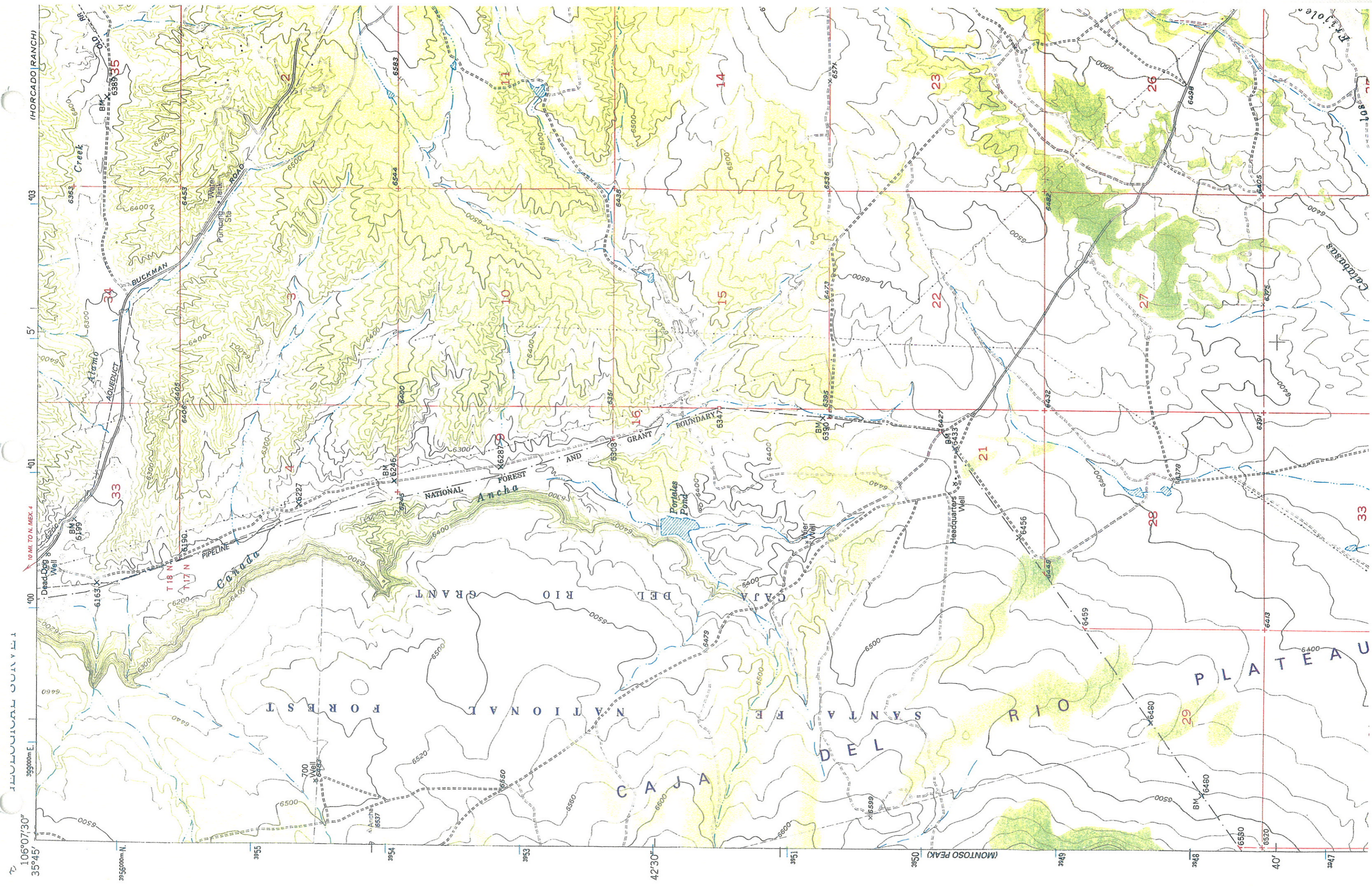
Control by USGS and NOS/NOAA

Compiled from aerial photographs taken 1951. Information shown in purple has been updated from aerial photographs taken 1990 and field checked. Map edited 1993. Conflicts may exist between some updated features and previously mapped contours



SCALE 1:24,000

Inquiry Number: 1556889.2 ↑N
TP Quad ☒ Adj Quad ☐
Quad Aqua Frio, NM.
Minute Series ☒ 7.5 ☐ 15 ☐ 30 ☐ 30x60
Year 1993 ☐ Provisional Edition ☒ Revised
☐ Photorevised ☐ Inspected from 1951
~~1:24,000~~ ☐ 1:24,000 ☐ 1:25,000 ☐ 1:31,680 ☐ 1:50,000
☐ 1:62,500 ☐ 1:100,000 ☐ 1:125,000



Inquiry Number: 1556889.2

TP Quad ☒

Adj Quad ☐

↑N

Quad: AQUA FRIA, NM.

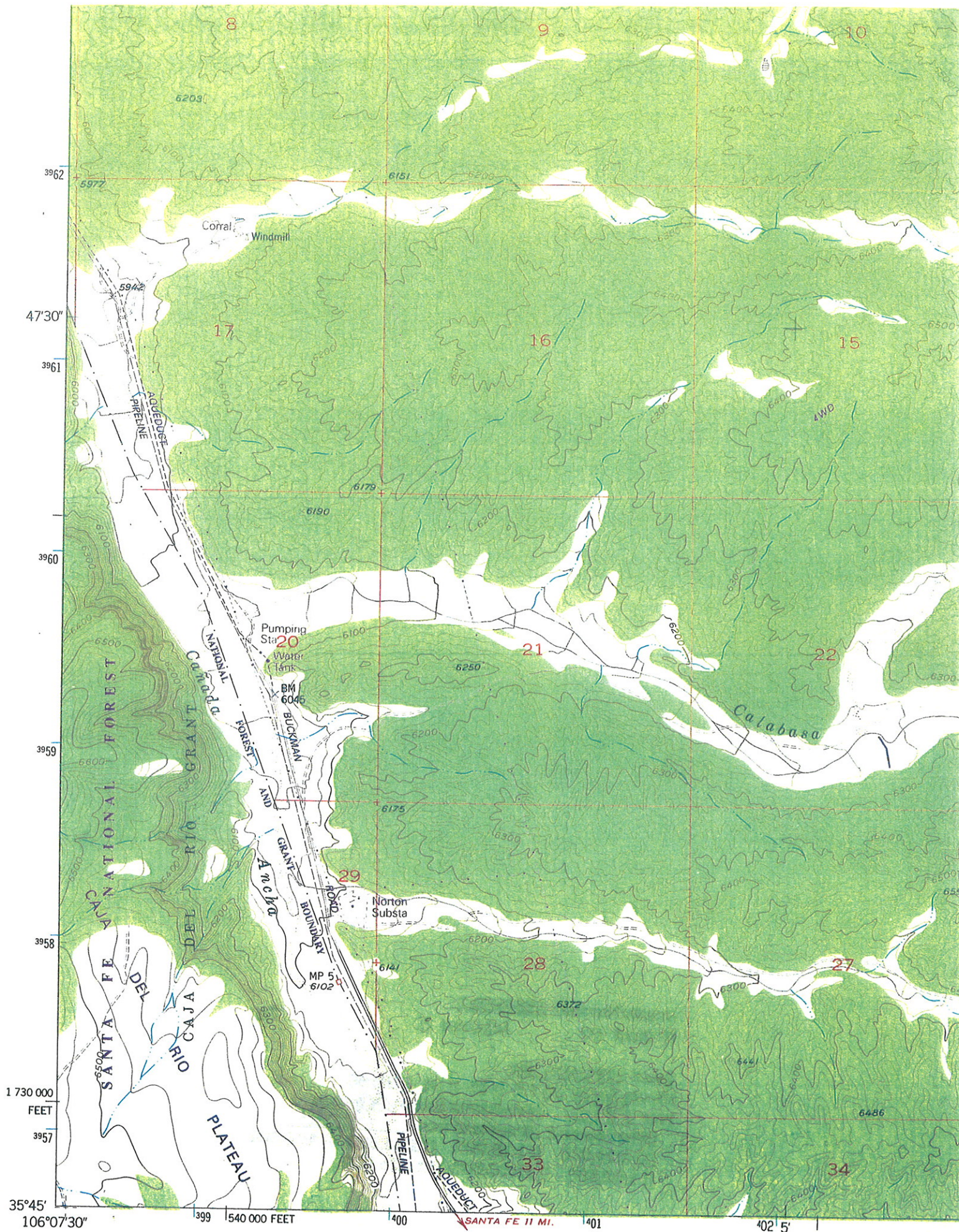
Minute Series ☒ 7.5 ☐ 15 ☐ 30 ☐ 30x60

Year 1992 ☐ Provisional Edition ☒ Revised

☐ Photorevised ☐ Inspected from 1951

☒ 1:24,000 ☐ 1:25,000 ☐ 1:31,680 ☐ 1:50,000

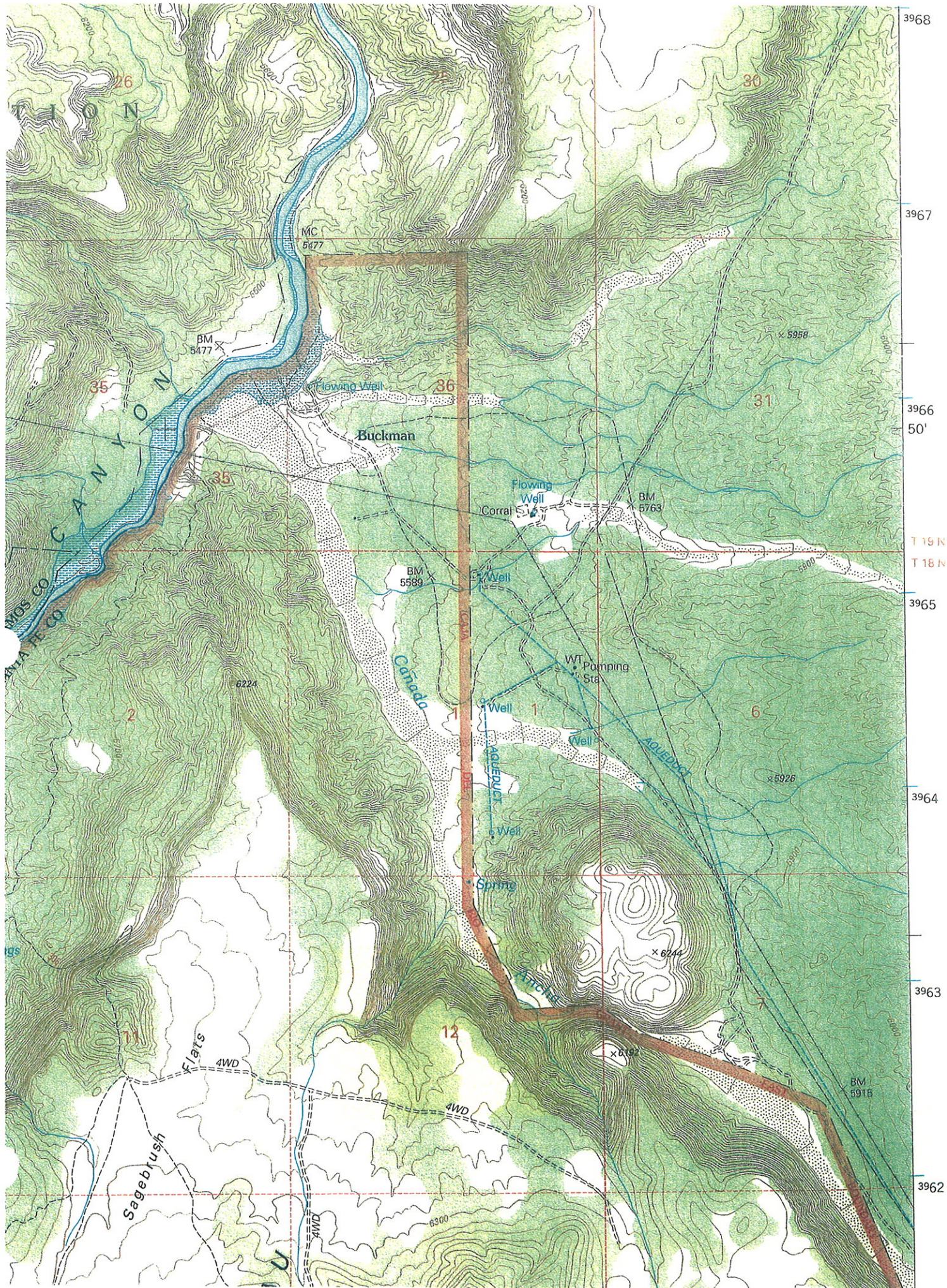
☐ 1:62,500 ☐ 1:100,000 ☐ 1:125,000



Inquiry Number: 1556889.2
TP Quad ☒ Adj Quad ☐

↑N

Quad: HORCADO, NM.
Minute Series ☒ 7.5 ☐ 15 ☐ 30 ☐ 30x60
Year 1993 ☐ Provisional Edition ☒ Revised
☐ Photorevised ☐ Inspected from 1953
☒ 1:24,000 ☐ 1:25,000 ☐ 1:31,680 ☐ 1:50,000
☐ 1:62,500 ☐ 1:100,000 ☐ 1:125,000



White Rock, NM
7.5 minute Series
Year 2002
1:24,000



Inquiry Number: 1556889.2

TP Quad ☒

Adj Quad ☐

↑N

Quad: HORCADO, NM.

Minute Series ☒ 7.5 ☐ 15 ☐ 30 ☐ 30x60

Year 2002 ☐ Provisional Edition ☐ Revised

☐ Photorevised ☐ Inspected from _____

☒ 1:24,000 ☐ 1:25,000 ☐ 1:31,680 ☐ 1:50,000

☐ 1:62,500 ☐ 1:100,000 ☐ 1:125,000



Inquiry Number: 1556889.2

TP Quad ☒

Adj Quad ☐

↑N

Quad: TURQUOISE HILL, NM.

Minute-Series ☒ 7.5 ☐ 15 ☐ 30 ☐ 30x60

Year 2002

☐ Provisional Edition ☐ Revised

☐ Photorevised ☐ Inspected from

☒ 1:24,000 ☐ 1:25,000 ☐ 1:31,680 ☐ 1:50,000

☐ 1:62,500 ☐ 1:100,000 ☐ 1:125,000